May 3, 1955 R. E. FOWLER 2,707,576

SEWING BUTTON HOPPER

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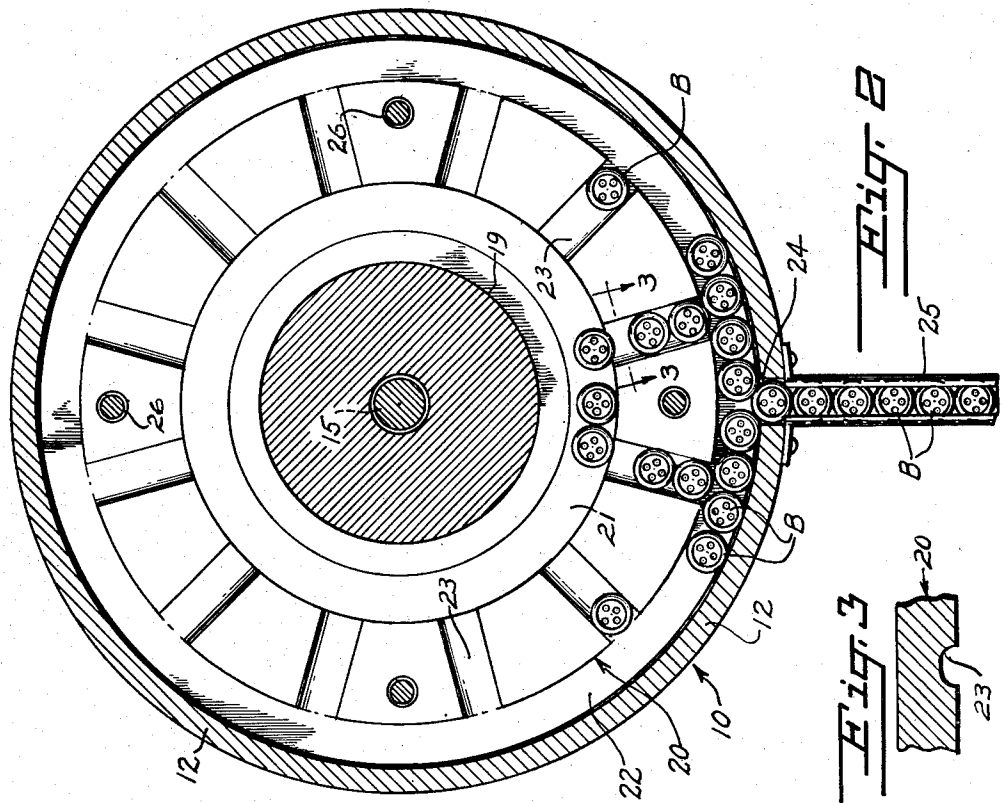


Fig. 2

Fig. 3

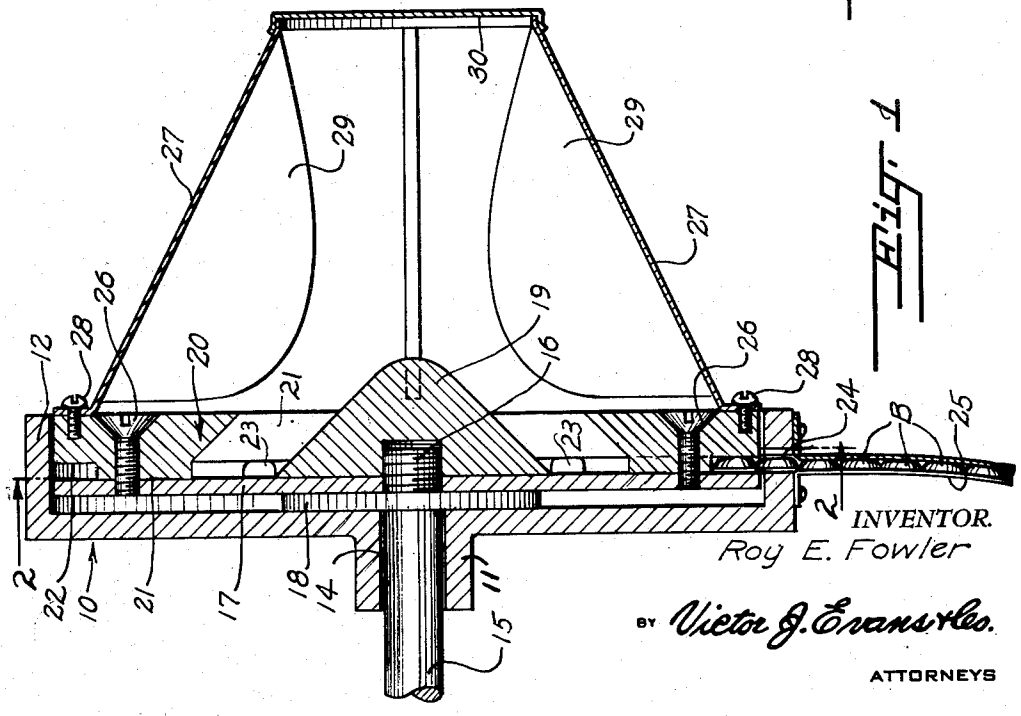


Fig. 1

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SEWING BUTTON HOPPER

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1 Claim. (Cl. 221—184)

This invention relates to a hopper, and more particularly to a hopper for holding and dispensing a quantity of buttons.

The object of the invention is to provide a button hopper which is adapted to be supplied with a quantity of buttons whereby upon actuation of the hopper the buttons will be discharged therefrom right side up to a sewing machine.

Another object of the invention is to provide a sewing button hopper which includes a housing having a cover detachably mounted thereon so that the cover or lid can be removed when additional buttons are to be placed in the hopper, there being a rotatable plate arranged in the hopper and a chute leading from the hopper to the sewing machine, the hopper of the present invention being constructed so that a large number of buttons will be supplied to the sewing machine chute right side up.

A further object of the invention is to provide a sewing button hopper which is extremely simple and inexpensive to manufacture.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawings, forming a part of this application, and in which like numerals are used to designate like parts throughout the same:

Figure 1 is a vertical sectional view taken through the hopper, constructed according to the present invention.

Figure 2 is a sectional view taken on the line 2—2 of Figure 1.

Figure 3 is a sectional view taken on the line 3—3 of Figure 2.

Referring in detail to the drawings, the numeral **10** designates a base which may be fabricated of any suitable material, and the base **10** includes a horizontally disposed portion **11**. Extending outwardly from the base **10** is an annular flange **12**, Figure 1. The base **10** is provided with a central opening **14** through which projects a shaft **15** and the shaft **15** may be actuated or driven by any suitable source of power.

The outer end of the shaft **15** is threaded exteriorly as at **16**, and a vertically disposed rotatable plate **17** is mounted on the end of the shaft **15**. Thus, as the shaft **15** rotates the plate **17** will be rotated therewith.

Interposed between the plate **17** and the base **10** is a washer or disc **18**, and mounted on the outer threaded portion **16** of the shaft **15** is a conical shaped nut **19**. The nut **19** serves to maintain the parts in their assembled relationship with respect to each other.

Arranged adjacent the plate **17** is an annular body member **20**, and the body member **20** is provided with a pair of annular concentrically arranged grooves or passageways **21** and **22**. Suitable slots **23** which are radially disposed, serve to interconnect the grooves **21** and **22** together so that the buttons B can pass therethrough.

The flange **12** is provided with a cut-out **24**, and communicating with the cut-out **24** is a chute **25**. The buttons B when they are right side up, pass from the groove

21, through the slots **23** into the groove or passageway **22**. From the passageway or groove **22**, the buttons B pass through the cut-out **24** and then through the chute **25** by gravity to the sewing machine. In this manner the buttons B will be delivered right side up to the sewing machine ready to be sewed onto the cloth or other material.

A plurality of suitable securing elements such as screws **26** are provided for connecting the body member **20** to the plate **17**. Supported on the body member **20** and connected thereto is a casing or housing **27**. The portion of the housing **27** is adapted to be connected to the body member **20** by suitable securing elements such as bolts or screws **28**. Suitable baffles **29** are arranged inwardly of the housing **27** for guiding the buttons within the hopper. A suitable lid or cover **30** is removably mounted on the outer end of the housing **27** and the cover **30** may be removed when the housing **27** is to be refilled with buttons. It is to be noted that the hopper of the present invention operates in a vertical position.

From the foregoing, it is apparent that a hopper has been provided which will insure that a plurality of buttons are automatically and continuously fed to a sewing machine. The buttons can be loaded into the housing **27** of the hopper by removing the cover **30** and then upon actuation or rotation of the shaft **15** the plate **17** and body member **20** will be rotated. This rotation permits the buttons to enter the groove **21** and pass through the slots **23** only if the buttons are right side up. In the event that the buttons are not able to pass through the slots **23**, then the buttons will continue to be shuffled and intermixed in the housing **27** until they are able to enter the groove **21** and pass through the slots **23** into the groove **22**. The buttons in the groove **22** are then automatically fed through the cut-out **24** to the chute **25** and from the chute **25** the buttons B can be fed to the sewing machine.

Thus, after the buttons leave the hopper of the present invention they will be in the correct position to be immediately sewed on the cloth or other material. As the plate **17** and body member **20** are rotated by the shaft **15** the buttons in groove **21** pass through the slots **23** providing the buttons are right side up. The slots **23** are so shaped as shown in Figure 3 that the buttons cannot pass therethrough unless they are right side up. Those buttons which are not in the correct position will remain in the groove **21** and will eventually be carried back to the interior of the housing **27** to be reshuffled. Thus, rotation of the parts will clean the slots **23** of any buttons which were not turned to the right position. The chute **25** on becoming filled with buttons will not hamper the operation of the hopper, because the buttons B will merely be deposited in the groove **22**. By removing the screws **28** access can be gained to the body member **20** so that other sizes of body members can be inserted to accommodate different sizes and shapes of buttons. By means of the present invention a large number of buttons can be turned to their proper position ready to be sewed onto cloth or other material.

I claim:

A sewing button hopper comprising a vertically disposed base provided with a central opening, a horizontally disposed annular flange extending outwardly from the outer periphery of said base, a shaft extending through said opening and provided with an outer exteriorly threaded end, a circular plate arranged within said base and connected to said shaft, a disc interposed between said plate and base, a conical shaped nut arranged in threaded engagement with the outer end of said shaft, an annular body member supported on said plate and detachably connected thereto, there being first and second concentrically arranged grooves arranged in

said body member, there being a plurality of radially extending slots interconnecting said grooves together, said flange being provided with a cut-out, a chute connected to said flange for receiving the buttons from said cut-out, a housing detachably connected to said flange, a plurality of baffler arranged in said housing, and a cover removably mounted on said housing.

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